



## CONSULTING ENGINEERS & GEOLOGISTS, INC.

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Reference: 012114

July 30, 2013

Mr. Mark Andre, Environmental Services Director  
City of Arcata  
736 F Street  
Arcata, CA 95521

RECEIVED

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CITY OF ARCATA  
ENVIRONMENTAL SERVICES DEPT.

**Subject: Proposed Compliance Schedule, Cypress Grove Chèvre, Arcata, California**

Dear Mr. Andre:

SHN Consulting Engineers & Geologists, Inc. has prepared a proposed compliance schedule on behalf of Cypress Grove Chèvre for the Cypress Grove Chèvre facility in Arcata, California. The proposed compliance schedule provides information as requested by the City of Arcata to address violations of the City's Categorical Industrial User Wastewater Discharge Permit No. 004-01-002. The compliance schedule includes the minimum milestones required by the City as outlined in the July 3, 2013, Compliance Order for Cypress Grove Chèvre and provides progress report dates and completion dates, as applicable for each milestone. The proposed compliance schedule is being submitted within 30 days of receipt of the Compliance Order in accordance with the order terms.

### **Proposed Compliance Schedule**

#### **Best Management Practices**

Compliance order item "a" requires Cypress Grove Chèvre to submit a report of best management practices (BMPs) that are/will be implemented in the interim until a final pretreatment system is installed at the facility. A copy of the required BMP report is included as Attachment 1 to this letter. The BMP report is being submitted within 30 days of receipt of the Compliance Order in accordance with the order terms.

#### **24-Hour pH Meter Installation**

Compliance order item "b" requires Cypress Grove Chèvre to submit a report that confirms the installation of a 24-hour pH meter, including an operations and maintenance plan for the meter. A copy of the required meter installation report is included as Attachment 2 to this letter. The installation report includes a detailed plan for responding to incidents of pH violations in the interim period until the continuous pH monitoring and control system is installed. The proposed installation report is being submitted within 30 days of receipt of the Compliance Order in accordance with the order terms.

Mr. Mark Andre  
Proposed Compliance Schedule; Cypress Grove Chèvre, Arcata, CA  
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### **Date of Submission of Detailed Engineered Plans**

Compliance order item "c" requires Cypress Grove Chèvre to establish the date for submittal to the City of the detailed engineering plans for the pretreatment system for the facility. The City has requested that the plans be submitted at least 90 days prior to the installation of the engineered pretreatment system.

The pretreatment system is proposed to be installed at the facility by March 1, 2014. The final plans addressing the minimum requirements as outlined in the order will be submitted to the City by December 1, 2013, to facilitate the review process in accordance with the order terms.

### **Date of Pretreatment System Installation**

Compliance order item "d" requires Cypress Grove Chèvre to establish the date for installation of the engineered pretreatment system. As noted above, the pretreatment system is scheduled to be installed by March 1, 2014.

If you have any questions or need additional information, please call me at 707-441-8855.

Sincerely,

**SHN Consulting Engineers & Geologists, Inc.**



Mike Veach, PE  
Project Manager

MCV/LKS:lms

Attachments: 1. BMP Report  
2. pH Meter Installation Report and User Guide

### **Reference Cited**

City of Arcata. (July 2013). "Compliance Order for Cypress Grove Chèvre for Violations of Categorical Industrial User Wastewater Discharge Permit No. 004-01-002" Arcata, CA:Arcata.

## **Attachment 1**

### **Report of Best Management Practices**

#### **Fats, Oil, and Grease Best Management Practices Plan**

Cypress Grove Chèvre will implement the following best management practices (BMPs) in order to minimize the amount of fats, oil and grease (FOG) in their wastewater discharge until a final pretreatment system is installed at the facility:

1. Dry wipe all heavily soiled equipment and floors prior to rinsing with hot water. This will reduce the amount of FOG from cheese and cheese particles entering the wastewater system
2. Reduce temperature of initial rinse water to less than 140 degrees Fahrenheit. Temperatures above 140 degrees Fahrenheit can dissolve grease and may contribute to FOG passing through the grease interceptor system.
3. Train all creamery employees in the FOG BMPs.

## **Attachment 2**

### **pH Meter Installation Report**

#### **Installation of pH Meter**

Cypress Grove Chèvre has installed an Extech Model SDL100 pH datalogger at the sample port at the end of the pretreatment system. At the time of writing, the unit was providing dubious readings. As such, another unit is being shipped to the Cypress Grove Chèvre facility, and will be installed upon arrival. The User Guide for the pH meter is included with this attachment.

#### **Operations and Maintenance Plan**

The pH datalogger will be calibrated and the sample results will be downloaded on a daily basis during normal operating hours, currently Monday through Thursday. The datalogger will be set to sample at least every 5 minutes. Operation and maintenance will be performed according to the manufacturer's instructions listed in the attached User Guide.

#### **pH Violation Response Plan**

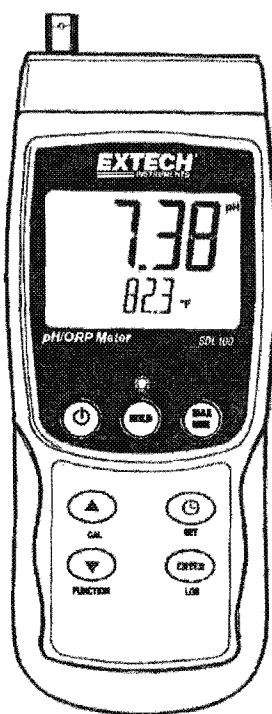
In the event of the facility being out of compliance for pH at the sample port, Cypress Grove Chèvre will immediately begin neutralizing the high volume cleaning solutions used in the facility before they are drained. Once the pH parameter is back in compliance, normal cleaning operations will resume without neutralizing the high volume cleaning solutions. Other solutions such as a pH control system may be installed if pH non-compliance becomes significant.



## USER GUIDE

### pH/ORP Meter *SD Card real-time Datalogger*

### Model SDL100



## Introduction

Congratulations on your purchase of the Extech SDL100 pH/ORP Meter, an SD Logger Series meter. This meter displays and stores pH (from 0 to 14.00pH) and ORP ( $\pm 1999\text{mV}$ ) readings. A temperature probe (supplied) can be inserted to the meter to provide automatic temperature compensation. Logged data readings are stored on an SD card for transfer to a PC. In addition, an RS232 port allows data streaming to a PC. This meter is shipped fully tested and calibrated and, with proper use, will provide years of reliable service.

## Safety

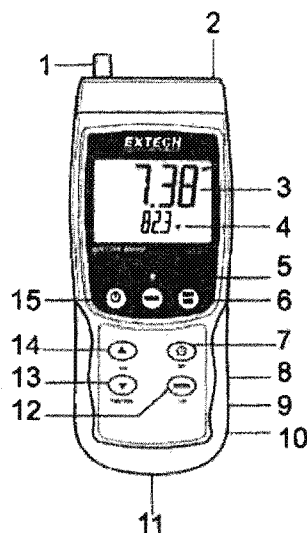
### International Safety Symbols



This symbol, adjacent to another symbol or terminal, indicates the user must refer to the manual for further information.

## Meter Description

1. pH/ORP Sensor input BNC jack
2. Temperature probe input jack
3. pH/ORP Measurement reading on LCD Display
4. Temperature reading on LCD Display
5. HOLD and Backlight key
6. MAX-MIN key
7. SET and Clock key
8. PC interface jack
9. Reset button
10. Power Adaptor jack
11. SD card slot
12. ENTER and LOG key
13. Down arrow / Function key
14. Up arrow / CAL key
15. Power ON-OFF key



### Notes:


Items 8, 9, and 10 are located behind the snap-off compartment cover on meter's right side.

Battery compartment, tilt stand, and tripod mount are located on the rear of the instrument

## Getting Started

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### Power ON-OFF

- Press and hold the power button  for at least 1.5 seconds to power ON the meter.
- Press and hold the power button for 1.5 seconds to power OFF the meter.
- This meter is powered by six (6) 1.5VDC 'AA' batteries or by optional AC adaptor. If the meter will not switch ON please check that fresh batteries are installed in the rear battery compartment (refer to the battery replacement section later in this guide) or, in the case of the AC adaptor, check that the adaptor is connected correctly to the meter and to an AC source (refer to the AC Power Adaptor section later in this guide).

## pH/ORP mV Measurements

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### Selecting pH or ORP modes of operation

Press and hold the FUNCTION button for at least 1.5 seconds; the display will begin to toggle between pH and ORP modes. Release the FUNCTION button when the desired mode is displayed.

### pH Measurement Range

pH measurements are displayed in the range of 0.00 to 14.00 in the upper, larger digit display area of the meter's LCD. Measurements made outside of this range will yield dashes (- - -) on the meter's LCD. The Temperature value is shown below the pH reading on the LCD. Refer to the Measurement section for further information.

### ORP mV Measurement Range

Ion-selective ORP (Oxidation Reduction Potential) measurements are displayed in the range of  $\pm 1999$  mV (millivolts) in the upper, larger digit display area of the meter's LCD. Measurements outside of this range will yield dashes (- - -) on the meter's LCD.

### Connecting the pH or ORP Electrode

The measurement electrode connects to the BNC socket on the top left of the meter. If a pH electrode is being connected to the meter for the first time, please perform a calibration as described in the Calibration section of this user guide.

### Taking a pH or ORP Measurement

For pH measurements only, determine whether Manual or Automatic Temperature Compensation will be used and then set up as required.

Immerse the pH or ORP electrode into the solution under test and gently agitate the solution with the probe. When the meter's display has stabilized, note the reading (stabilization may require several seconds up to several minutes, depending on the solution).

When measurements have been completed, be sure to store the pH electrode in its protective cap with a pH4 moistened sponge.


#### **Manual / Automatic Temperature Compensation (for pH measurements only)**

pH measurements are most accurate when the temperature of the solution under test is known and a temperature compensation factor is applied to the measurement. This is achieved using Manual or Automatic Temperature Compensation.

For Manual Temperature Compensation, the external temperature probe is not connected to the meter and the temperature of the solution under test is manually entered in the Setup Mode. The temperature entered is shown on the lower LCD line.

For Automatic Temperature Compensation, the external probe is connected to the meter and inserted into the solution to be tested. The measured temperature of the solution is displayed on the LCD.

#### **Display Backlight**

To turn the display backlight ON or OFF, press and hold the backlight  button for at least 1.5 seconds.

#### **Data Hold**

To freeze a displayed reading on the LCD, momentarily press the HOLD button (the HOLD display icon will appear). To release the held reading, press the HOLD button again.

#### **Max-Min Reading Record and Recall**

For a given measurement session, this meter can record the highest (MAX) and the lowest (MIN) readings for later recall.

1. Press the MAX-MIN button momentarily to access this mode of operation (REC icon appears). The meter is now recording the MAX and MIN readings.
2. Press the MAX-MIN button again to view the current MAX readings (MAX icon appears). The readings on the display are now the highest readings encountered since the REC icon was switched on (when the MAX-MIN button was first pressed).
3. Press the MAX-MIN button again to view the current MIN readings (MIN icon appears). The readings on the display are now the lowest readings encountered since the REC icon was switched on (when the MAX-MIN button was first pressed).
4. To exit the MAX-MIN mode, press and hold the MAX-MIN button for at least 1.5 seconds. The meter will beep, the REC-MAX-MIN icons will switch off, the MAX-MIN memory will clear, and the meter will return to the normal operating mode.



#### **Enabling/Disabling the Auto Power OFF Feature**

1. Access the **PoFF** parameter.
2. Use the arrow buttons to select ON (enable) or OFF (disable). With the Auto Power OFF feature enabled, the meter will automatically switch OFF after 5 minutes of inactivity.
3. Press ENTER to confirm setting.
4. Press and hold the SET button for at least 1.5 seconds to exit to the normal operation mode (or simply wait 7 seconds for the meter to automatically switch to the normal operating mode).

#### **Set the Beeper Sound ON or OFF**

1. Access the **bEEP** parameter.
2. Use the arrow buttons to select ON (enable) or OFF (disable).
3. Press ENTER to confirm setting.
4. Press and hold the SET button for at least 1.5 seconds to exit to the normal operation mode (or simply wait 7 seconds for the meter to automatically switch to the normal operating mode).

#### **Numerical Format (comma or decimal)**

European and USA numerical formats differ. The meter defaults to USA mode where a decimal point is used to separate units from tenths, i.e. **20.00**; The European format uses a comma, i.e. **20,00** to separate units from tenths. To change this setting:

1. Access the **dEC** parameter.
2. Use the arrow buttons to select USA or EUro.
3. Press ENTER to confirm setting.
4. Press and hold the SET button for at least 1.5 seconds to exit to the normal operation mode (or simply wait 7 seconds for the meter to automatically switch to the normal operating mode).

#### **SD Card FORMATTING**

1. Access the **Sd-F** parameter.
2. Use the arrow buttons to select YES to format the card (select NO to abort). Note that all data on the card will be lost if formatting is attempted.
3. Press ENTER to confirm selection.
4. Press ENTER again to re-confirm.
5. The meter will automatically return to the normal operating mode when formatting is complete. If not, press and hold the SET button for at least 1.5 seconds to exit to the normal operation mode.

#### **Set the Temperature Units of Measure (°C or °F)**

1. Access the **t-CF** parameter.
2. Use the arrow keys to select °C or °F.
3. Press ENTER to confirm setting.
4. Press and hold the SET key for at least 1.5 seconds to exit to the normal operation mode (or simply wait 7 seconds for the meter to automatically switch to the normal operating mode).

#### **Set the Manual Temperature value**

1. Access the **t-SEt** parameter.
2. Use the arrow keys to select the temperature of the solution under test in °C or °F.
3. Press ENTER to confirm setting.
4. Press and hold the SET key for at least 1.5 seconds to exit to the normal operation mode (or simply wait 7 seconds for the meter to automatically switch to the normal operating mode).

### System Reset

If the meter's keys become inoperable or if the display freezes the Reset button can be used to reset the instrument.

1. Use a paper clip or similar item to momentarily press the reset button located on the lower right side of the instrument under the snap-off compartment cover.
2. After pressing the Reset button, switch the instrument ON by pressing and holding the POWER key for at least 1.5 seconds. If using the power adaptor unplug the adaptor and then plug it back in again to power the meter.

## ***pH Calibration procedure***

### **pH Calibration Considerations**

An ideal pH Electrode generates a linear mV output of  $\pm 59$  mV per pH with 0 mV at a pH of 7.00. However, as time passes, the electrode ages and the mV output per pH is reduced. This is why calibration is so important. The Electrode must be calibrated with the companion meter as often as possible. In addition, the Electrode must be replaced when it has deteriorated or becomes defective. The meter must also be well maintained and calibrated for best results.

### **Required Equipment for pH Calibration**

1. pH Electrode
2. pH buffer solutions

### **pH Calibration Procedure**

1. Prepare buffer solutions for 7.00 pH and either 4.00 pH or 10.00 pH. Use the 4.00 pH and 7.00 pH solutions for measurements that are expected to be on the lower side of the scale. Use the 7.00 pH and 10.00 pH solutions for measurements that are expected to be on the higher side of the pH scale. Note that all three ranges can be calibrated for a full 3-point pH calibration if desired
2. Connect the pH Electrode to the meter
3. Switch the meter ON by pressing and holding the power button for at least 1.5 seconds. Ensure that the pH mode of operation is selected as described earlier in the Measurement section
4. Manually adjust the temperature compensation value (in Setup Mode) to match the buffer solution temperature or use the supplied temperature probe for automatic temperature compensation as discussed earlier (see the Temperature Compensation section for details)
5. Rinse the electrode with distilled water to remove residual solution
6. Immerse the pH Electrode and temperature Probe (if used) in the 7.00 pH buffer solution and agitate the solution gently with the Electrode
7. Allow the calibration to stabilize for 15 to 30 seconds and view the reading on the meter LCD
8. Press and hold the CAL button for at least 1.5 seconds until the CAL icon appears on the display and then release the CAL button
9. Use the arrow keys to scroll to the 7.00 pH display
10. Press the ENTER button to save the calibration data
11. Repeat steps number 5 through 10 for the 4.00 pH and 10.00 pH buffer solutions
12. Repeat the entire calibration to ensure optimal accuracy. Remember to rinse the Electrode before placing it into a new solution

#### Clearing pH Calibration data

1. From the normal operation mode, press and hold the CAL button for at least 1.5 seconds until the CAL icon appears on the display and then release the CAL button
2. Use the arrow keys to scroll to the CLR display
3. Press ENTER and all calibration data will be erased

### ***Datalogging and PC Interface***

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#### Types of Data Recording

- **Manual Datalogging:** Manually log up to 99 readings onto an SD card via push-button press.
- **Automatic Datalogging:** Automatically log data onto an SD memory card where the number of data points is virtually limited only by the card size. Readings are logged at a rate specified by the user.

**RS-232/USB:** The meter includes an RS-232/USB PC interface jack located on the lower right side of the meter under the snap-off compartment cover. For streaming of data to a PC via the RS232 Output jack, the optional 407001-USB kit (RS232 to USB cable and driver CD) along with the 407001 software (available free at [www.extech.com/sdl100](http://www.extech.com/sdl100)) are required.

#### SD Card Information

- Insert an SD card (from 1G size up to 16G) into the SD card slot at the bottom of the meter. The card must be inserted with the front of the card (label side) facing toward the rear of the meter.
- If the SD card is being used for the first time it is recommended that the card be formatted and the logger's clock set to allow for accurate date/time stamping during datalogging sessions. Refer to the Setup Mode section for SD card formatting and time/date setting instructions.
- European and USA numerical formats differ. The data on the SD card can be formatted for either format. The meter defaults to USA mode where a decimal point is used to separate units from tenths, i.e. **20.00**. The European format uses a comma, i.e. **20,00**. To change this setting, refer to the Setup Mode section.

#### Manual Datalogging

In the manual mode the user presses the LOG button to manually log a reading onto the SD card.

1. Set the sampling rate to '0' seconds as described in the Setup Mode section.
2. Press and hold the LOG button for at least 1.5 seconds and the DATALOGGER icon will appear on the LCD; the lower portion of the display will show "P N" (N = memory position number 1-99).
3. Momentarily press the LOG button to store a reading. The DATALOGGER icon will flash each time a data point is stored.
4. Use the ▲ and ▼ buttons to select one of the 99 data memory positions in which to record.
5. To exit the manual datalogging mode, press and hold the LOG button for at least 1.5 seconds. The DATALOGGER icon will switch off.

### Automatic Datalogging

In automatic datalogging mode the meter takes and stores a reading at a user-specified sampling rate onto an SD memory card. The meter defaults to a sampling rate of one second. To change the sampling rate, refer to the Setup Mode section (the sampling rate cannot be '0' for automatic datalogging):

1. Select the sampling rate in the Setup Mode (refer to Setup Mode section) to a value other than zero.
2. Press and hold the LOG button for at least 1.5 seconds. The meter will flash the DATALOGGER icon at the selected sampling rate indicating that readings are now being automatically recorded to the SD card.
3. If a card is not inserted or if the card is defective, the meter will display SCAN SD indefinitely. In this case, switch the meter OFF and try again with a valid SD card.
4. Pause the datalogger by pressing the LOG button momentarily. The DATALOGGER icon will stop flashing and the sample rate will display for a short time. To resume logging simply press the LOG button again momentarily.
5. To terminate the datalogging session press and hold the LOG button for at least 1.5 seconds.
6. When an SD card is used for the first time a folder is created on the card and named **PHA01**. Up to 99 spreadsheet documents (each with 30,000 readings) can be stored in this folder.
7. When datalogging begins a new spreadsheet document named **PHA01001.xls** is created on the SD card in the PHA01 folder. The data recorded will be placed in the PHA01001.xls document until 30,000 readings are reached.
8. If the measurement session exceeds 30,000 readings, a new document will be created (PHA01002.xls) where another 30,000 readings can be stored. This method continues for up to 99 documents, after which another folder is created (PHA02) where another 99 spreadsheet documents can be stored. This process continues in this same fashion with folders PHA03 through PHA10 (last allowable folder).

### SD Data Card to PC Data Transfer

1. Complete a datalogging session as detailed in above in the previous sections. Hint: For the first few tests, simply record a small amount of test data. This is to ensure that the datalogging process is well understood before committing to critical, large scale datalogging.
2. With the meter switched OFF, remove the SD Card.
3. Plug the SD Card directly into a PC SD card reader. If the PC does not have an SD card slot, use an SD card adaptor (available at most outlets where computer accessories are sold).
4. Power the PC and run a spreadsheet software program. Open the saved documents in the spreadsheet software program (see example spreadsheet data screen below).

Spreadsheet data example

	A	B	C	D	E	F	G
1	Position	Date	Time	CH1 Value	Ch1 Unit	Ch2 Value	Ch2 Unit
2	1	8/12/2011	13:00:00	7.00	pH	25.00	Degrees C
3	2	8/12/2011	13:00:01	7.00	pH	25.00	Degrees C
4	3	8/12/2011	13:00:02	7.00	pH	25.00	Degrees C
5	4	8/12/2011	13:00:03	7.00	pH	25.00	Degrees C
6	5	8/12/2011	13:00:04	7.00	pH	25.00	Degrees C
7	6	8/12/2011	13:00:05	7.00	pH	25.00	Degrees C
8	7	8/12/2011	13:00:06	7.00	pH	25.00	Degrees C
9	8	8/12/2011	13:00:07	7.00	pH	25.00	Degrees C
10	9	8/12/2011	13:00:08	7.00	pH	25.00	Degrees C
11	10	8/12/2011	13:00:09	7.00	pH	25.00	Degrees C
12	11	8/12/2011	13:00:10	7.00	pH	25.00	Degrees C
13	12	8/12/2011	13:00:11	7.00	pH	25.00	Degrees C